

REMARKS

Claims 1 and 11-30 remain pending. Applicants submit arguments for overcoming the new rejections stated in the Office Action. Accordingly, Applicants respectfully submit that the present application is in condition for allowance.

I. Claim Rejections - 35 USC §103(a)

In the non-final Office Action dated January 19, 2010, claims 1 and 11-30 are rejected under 35 USC §103(a) as being obvious over JP 11-011478 A in view of JP 11-350122 A and further in view of U.S. Patent No. 5,582,114 issued to Feiner.

The Prior Art

The primary reference, JP '478, discloses a "double box container" for storing or shipping a plurality of "glass base sheets" (see Abstract of JP '478). Paragraph Nos. 0001 and 0002 of JP '478 explain that the "glass base sheets" are "glass substrates" for "display devices", such as "liquid crystal display" and "plasma display" devices.

As best illustrated in FIGs. 3 and 4 of JP '478, the large glass display substrates are slid into the open top of the storage/transport box in a vertical orientation and are held in a vertical orientation by "guide grooves 60" formed in opposite sidewalls (58) of the box. As best explained in the last sentence in Paragraph No. 0035 of JP '478, the "flute width" of each groove (60) is 10 to 25% greater in thickness than the glass substrate, and more preferably, 5 to 40% greater in thickness than the glass substrate. This large gap provided by the guide groove (60) enables free sliding of the large glass substrate (62) into the grooves (60), and as best explained in Paragraph No. 0035 of JP '478, the guide groove (60) "plays the role of a mere guide". Thus, it should be understood that the guide grooves (60) guide a plurality of glass sheets into the box such that the sheets are vertically oriented and spaced-apart. However, the guide grooves (60) provide no role

with respect to supporting the glass substrates during transport and preventing damage of the glass substrates when the transport container is subject to impact.

Rather, “buffer members 64” are located on the inner surface of the lid (56) of the box. See FIG. 3 and Paragraph Nos. 0035 and 0036 of JP ‘478. The buffer members (64) are thin strips of ‘elastic’ material that extend transversely across the top edges of the plurality of spaced-apart glass substrates. The function of the buffer member (64) is to prevent sliding of the glass substrates within the box in an upward or downward direction as directed by the guide grooves (60).

The secondary reference, JP ‘122, is cited merely for the purpose of disclosing a sputtering target.

The secondary reference, Feiner, discloses a ‘tiltable portable pallet’ enabling man-powered ‘tiltable transport’.

The Rejection

In the Office Action, it is stated that “it would have been obvious to one of ordinary skill in the art to use the man-powered transport taught by Feiner in place of the forklift of Iwamoto et al. [JP ‘478]”.

Argument for Non-obviousness

Applicants respectfully disagree with the above stated conclusion and respectfully request reconsideration with respect to a modification of JP ‘478 relative to Feiner.

As stated above, the object to be transported in JP ‘478 is a large glass substrate that is retained in a vertical position within the transport box. The guide grooves (60) loosely engage only the side edges of the large glass substrates, and the “buffer members” (64) only engage the top

edge of the glass substrates at spaced intervals. It is clear from the written disclosure as well as the illustrations of JP '478 that nothing supports the front and rear faces of the large glass substrates. Rather, there is space between each adjacent pair of glass substrates that may be filled with an "inactive gas" for the purpose of preventing contamination of the front and rear surfaces of the glass substrates. See Paragraph 0037 of JP '478.

Applicants respectfully submit that, if the pallet of JP '478 is tilted at an angle to the horizontal, a force perpendicular to the front and rear face surfaces of the large glass substrates will be applied to the substrates due to gravity and the weight of the substrates. However, since JP '478 only provides "buffer members" (64) at the top edge of the large glass substrates (and possibly along the bottom edge), there is no material buffering the overall front and rear surfaces of the large glass substrates. Thus, the large glass substrates are not buffered or protected against forces that may be generated when the shipping container is tilted for "tilted transport" as is clearly required to make the above stated rejection. If the shipping container is subject to an impact, particularly a hard impact, when the container is tilted, the force exerted on the large glass substrates will certainly result in damage to the unsupported front and rear surfaces of the large glass substrates.

Accordingly, one of ordinary skill in the art would clearly be aware that "tilted transport" of the shipping box having a plurality of vertically disposed large glass substrates of JP '478 should be avoided. Thus, the disclosure of JP '478 inherently "teaches-away" from "tilted transport" and the addition of structure that would enable "tilted transport". "Teaching away" is the antithesis of the art suggesting that the person of ordinary skill in the art go in the claimed direction. Essentially, "teaching away" is a per se demonstration of lack of obviousness. In re Fine, 873 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

Also, when a §103 rejection is based upon a modification of a reference that destroys the intent, purpose or function of the invention disclosed in the reference, such a proposed modification is not proper and a *prima facie* case of obviousness cannot be properly made. In re Gordon, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). Here, the structure and the use of structure that would enable “tilted transport” of the shipping container of JP ‘478 would result in the damage of its contents (i.e. fragile large glass substrates of liquid crystal and plasma displays). Thus, modifying JP ‘478 with the manual “tilted transport” of Feiner would destroy the intent, purpose and function of the invention of JP ‘478 which are directed to safely transporting and storing large glass substrates in a manner avoiding any contamination to the front and rear surfaces of the large glass substrates (i.e. the only thing touching the front and rear faces of the spaced-apart large glass substrates is an “inactive gas”). Tilted transport of the shipping container of JP ‘478 will result in forces being generated on the glass substrates that would cause damage to the substrates.

Further, the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art suggests the desirability of the combination. In re Mills, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). There is no common sense desire to tilt a shipping container when such tilting action will lead to the creation of forces that damage the contents (large glass substrates) of the container.

Still further, the “guide grooves” (60) provided in the transport box of JP ‘478 are required to have a width greater than the thickness of the glass substrates to fulfill their intended role. See Paragraph No. 0035 of JP ‘478. Nevertheless, with this kind of structure, one of ordinary skill in the art will recognize that there will be a gap remaining after the glass substrate is received in the

guide grooves (60) and the glass substrate will clearly wobble and become unstable should the shipping container be transported in a tilted position.

For all of the above stated reasons, Applicants respectfully submit that it would not be obvious to one of ordinary skill in the art to modify the shipping container of JP '478 with the manual tilted transport capabilities of Feiner. Such a modification would result in the creation of forces that would damage the objects being transported and would be avoided by one of ordinary skill in the art. Accordingly, Applicants respectfully request reconsideration and removal of the above stated conclusion with respect to obviousness and the rejection requiring JP '478 to be modified in view of Feiner.

With respect to the present invention, it should be understood that the fragile sputtering target is retained horizontally within the inner box and is required to be sandwiched between the "upper" and "lower" plates of the inner box. The retention frame of claim 1 of the present application is required to extend continuously about and support the outer peripheral edge of the sputtering target while the upper and lower plates of the inner box cushion and buffer the opposite faces of the sputtering target. Thus, the plate-shaped sputtering target of the present invention is required to be "entirely encapsulated and cushioned by said retention frame and lower and upper plates".

There is no gap between the retention frame of the present invention and the peripheral edge of the sputtering target, and there is no gap between the faces of the sputtering target and the upper and lower plates of the inner box. Unlike JP '478, direct contact of the upper and lower plates with the faces of the sputtering target is required and is not prevented. JP '478 directs one of ordinary skill in the art to avoid contact with the faces of the glass substrates so as to prevent contamination.

Accordingly, since the entire surface of the sputtering target of the present invention is engaged and retained within the inner box of the present invention, the fragile sputtering target is in no danger of becoming damaged when the transport box is subject to tilted transport. This is not true with respect to JP '478, the primary reference. Thus, the cited combination of references clearly fails to disclose or render the present invention obvious to one of ordinary skill in the art.

For all of the above reasons, Applicants respectfully request reconsideration and removal of the §103(a) rejection of claims 1 and 11-30 as being obvious over JP '478 in view of JP '122 and in further view of Feiner.

II. Conclusion

In view of the above amendments and remarks, Applicants respectfully submit that the claim rejections have been overcome and that the present application is in condition for allowance. Thus, a favorable action on the merits is therefore requested.

Please charge any deficiency or credit any overpayment for entering this Amendment to our deposit account no. 08-3040.

Respectfully submitted,
Howson & Howson LLP
Attorneys for Applicants

By /William Bak/
William Bak
Reg. No. 37,277
501 Office Center Drive
Suite 210
Fort Washington, PA 19034
(215) 540-9216